

**Imperial College  
London**

# **Science, Climate Policy and COP27**

**The Foundation for Science and Technology**

**The Royal Society**

**26 October 2022**

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# COP27: Pathways to scientific impact

**Earth Information Day:** 9 November 2022

**Science Day:** 10 November 2022

## Science push

- IPCC/WMO/MERI Foundation Pavilion:  
*Science for Climate Action*

## Policy pull

- Mandated Events
  - Technical Dialogue of the Paris Agreement Global Stocktake
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## Mitigation

- Making sense of the IPCC mitigation scenarios
  - Estimating GHG emissions
  - Financing the transition
  - Mitigating climate change through demand side responses
  - Managing just transitions
  - Delivering a sustainable future: feasibility and policy
  - Getting to Net-Zero in energy intensive industries
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# Scenarios (or is it pathways?)

Global warming levels  
(GWLs)

Illustrative scenarios

Scenario  
categories

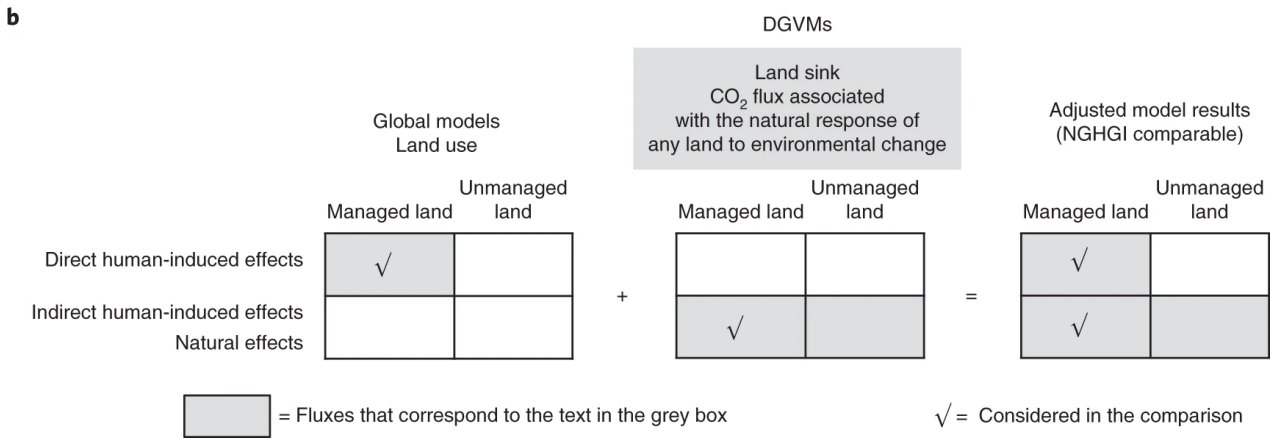
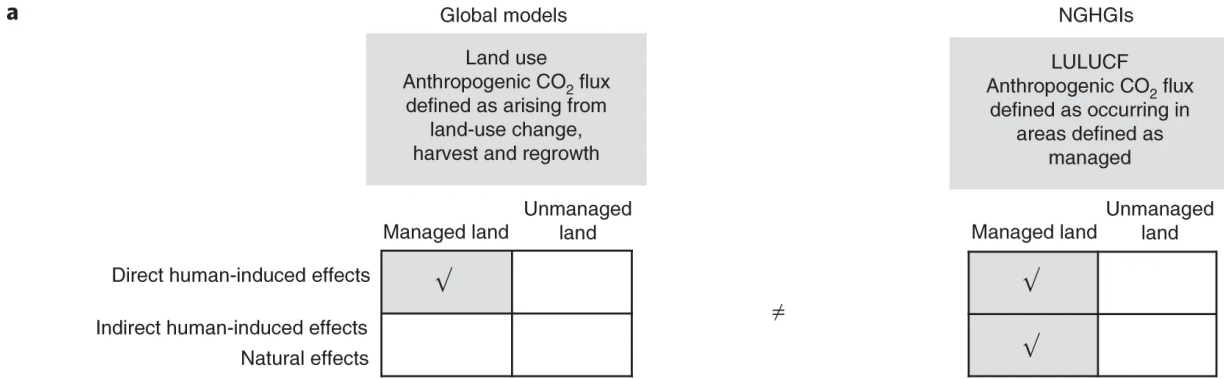
Illustrative mitigation  
pathways (IMPs)

Shared policy  
assumptions (SPAs)

Representative  
concentration pathways  
(RCPs)

Shared socio-economic  
pathways (SSPs)

# Conceptual differences between global models and national GHG emission inventories



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## Impacts, adaptation and vulnerability

- The risk of cascading climate change shocks and stressors
  - Climate resilient development
  - Adaptation ecosystems
  - Nature-based solutions
  - Adaptation humans
  - Small islands
  - Ocean and climate action
  - Gender and justice
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## Cross-Working Group

- Overshoot - What does it mean to exceed 1.5°C
  - AR6 Summary for Urban Policymakers
  - Climate Information for Near-Term Preparedness/Risk Management
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## Mandated events

- Earth Information Day
    - Observations for adaptation and early warning systems
    - Earth observations for mitigation
  - Assessing adaptation needs: findings from WG II AR6
  - Special Event on the gender-related aspects of IPCC AR6
  - High-level Ministerial Roundtable on pre-2030 Ambition
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# Global Stocktake Technical Dialogue

## Round tables

- **RT.1 Mitigation, including response measures**  
Enhancing global mitigation pathways; transforming energy and industrial systems; transforming land and other systems; response measures
- **RT.2 Adaptation, including loss and damage**  
Efforts of developing countries; enhanced implementation and increasing ambition; adequacy and effectiveness; assessing collective progress and addressing loss and damage
- **RT.3 Means of implementation and support**  
Financial flows and catalytic role of finance; technology cooperation; enhancing and retaining capacity

## Focused exchanges on intersections

Pathways towards low GHG emissions and climate-resilient development; international cooperation on holistic and integrated approaches

## World Café

20 tables - 12 roundtable topics plus 8 system transformations: energy, transport, industry, agriculture, health, land, water, and urban

The negotiations are hungry for scientific advice -

- “keep the science alive”.

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